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## A HYBRID *LIMENITIS* FROM NEW YORK

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AN APPARENT HYBRID between *Limenitis arthemis* Drury and *L. archippus* Cramer (Nymphalidae) was taken by one of us (AMS) on 6 August 1967 in Dryden Township, near Ithaca, Tompkins County, New York. The specimen (figs. 1, 2) is a male in fresh condition. It agrees in most respects with the published description of *L. X arthechippus* Scudder (1889), and the upper surface is nearly identical to one of the bred examples figured by Field (1914).

There are at least four prior records of this hybrid from the Northeast, plus one involving the northwestern subspecies of *L. arthemis*, *rubrofasciata* B. & McD. The type specimen was first described by Edwards (1882) as *L. arthemis*, ab.C. The same specimen later served as the type of Scudder's *arthechippus*. It was collected at Chateaugay, Que. (vic. Montreal) by J. G. Jack in 1879. The other Eastern records are all from Field, who collected somewhat darker specimens at Alstead, N. H. in 1895 and 1896, and saw another in 1902 (Field, 1904). The Western specimen was collected at Beulah, Manitoba, and described as *L. X rubrofasechippus* by Gunder (1934). There seem to be no recent records from the East.

The somewhat similar *L. X rubidus* Strecker, a putative hybrid of *L. archippus* and *L. astyanax* Fabr., is known from Berks Co., Pa.; Jeannette, Westmoreland Co., Pa.; Wellesley, Mass.; "Sharborn" (Mass.?), Brooklyn, N.Y.; and "eastern N. Y." (probably Catskills). A recent example collected at Louisville, Ky. was described by Monroe (1953).



Fig. 1. *Limenitis* from Tompkins Co., N. Y. Upper surfaces. Top Left: *L. arthemis* ♂, Cayuga Inlet Valley, 3.viii.67 (AMS). Top right: *L. archippus* ♂, Monkey Run, Dryden, 6.viii.67 (AMS). Bottom: *L. X arthechippus* ♂, Monkey Run, Dryden, 6.viii.67 (AMS).



Fig. 2. Lower surfaces of the specimens shown in Fig. 1.

The sexes of the *rubidus* are not known, but all of the *archippus* recorded are males. Field (1914) reported an experimental cross of reared female *archippus* X wild male *arthemis*. He obtained poor egg hatchability (19/62) and an abnormal sex ratio (8♂:0♀ plus a dead pupa probably male; for 9:0 with expected 1:1  $\chi^2=9.0$ ,  $P < .005$ ). The preponderance of males is in accord with Haldane's Rule. Other broods of hybrid *Limenitis*, reared by Remington, also show this phenomenon (Remington, 1958).

The very different coloration of *L. arthemis* and *L. archippus* would suggest the existence of strong behavioral barriers to hybridization. Through most of their range the two species are strongly, but not totally, isolated on an ecological basis, *arthemis* being essentially a woodland insect while *archippus* occurs principally in open country. In this connection it is of interest that the Ithaca hybrid was taken in a disturbed, ecotonal area in close proximity to typical habitats frequented by the parent species. On the same stand of Teasel (*Dipsacus sylvestris* Huds.) with the hybrid were several normal *archippus*, one of which is figured, while in the woods several hundred feet away, fresh *arthemis* of the second brood were flying. The known food plants of *L. arthemis* near Ithaca are *Populus tremuloides* Michx. and *P. deltoides* Marsh. *L. archippus* has been reared locally on *P. deltoides* and observed ovipositing on willows (*Salix*). Of these, *Salix* spp. & *P. tremuloides* were present in the vicinity of the collection site.

#### LITERATURE CITED

- EDWARDS, W. H., 1882. Description of new species of butterflies found in the United States. *Papilio* 2:45-49.
- FIELD, W. L., 1904. Problems in the genus *Basilarchia*. *Psyche* 11:1-6.
- 1914. Hybrid butterflies of the genus *Basilarchia*. *Psyche* 21: 115-117.
- GUNDER, J. D., 1934. A check list revision of the genus *Basilarchia* Scudder. *Canadian Entomologist* 66:39-48.
- MONROE, B. L., Jr., 1953. A hybrid *Limenitis*. *Lepidopterists' News* 7:53.
- REMINGTON, C. L., 1958. Genetics of Populations of Lepidoptera. *Proc. X Int. Congr. Ent.* 2:787-806.
- SCUDDER, S. H., 1889. *Butterflies of the Eastern United States and Canada*. Vol. 1, p. 296. Author, Cambridge, Mass.